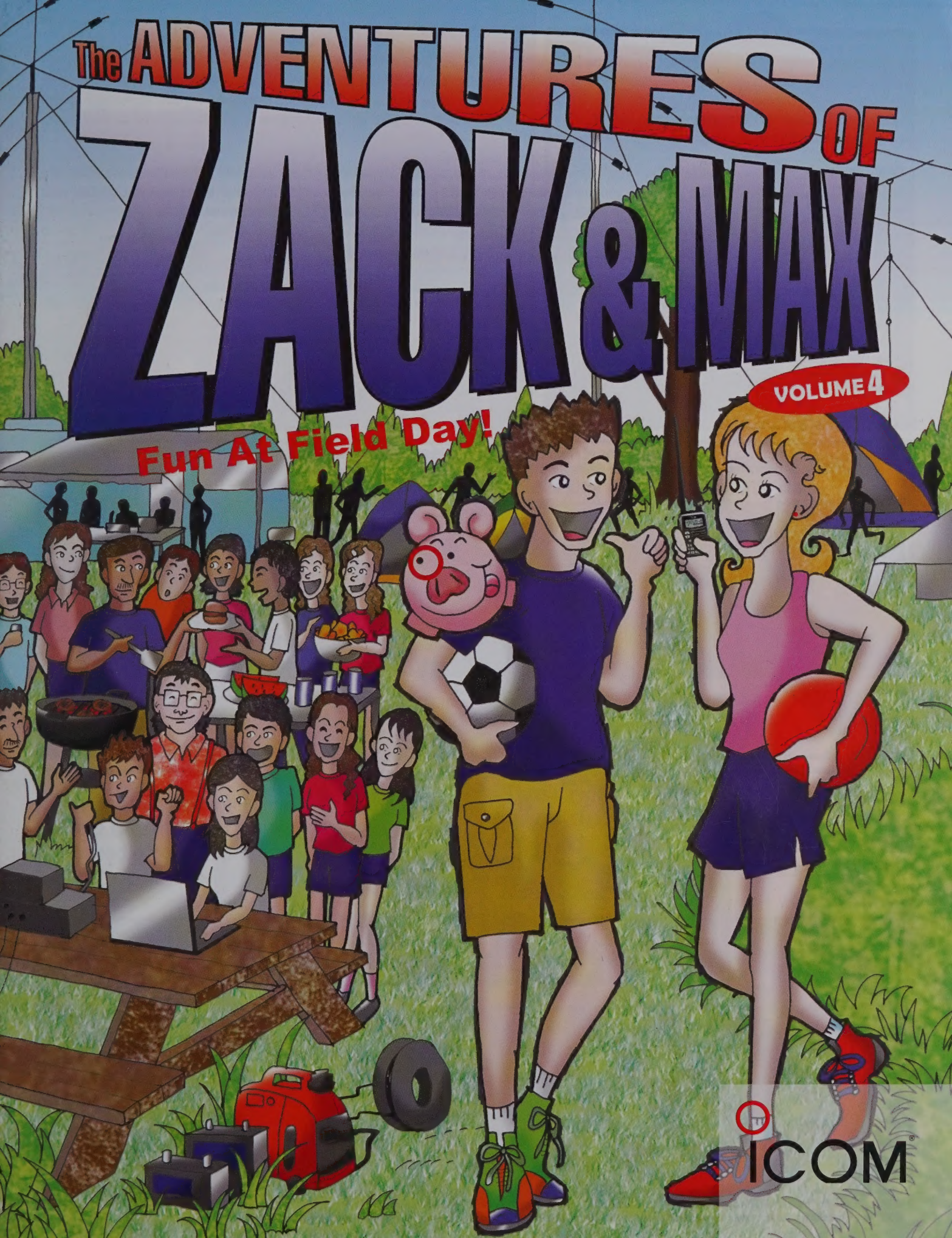
The ADVENTURES OF
ZACK & MAX
VOLUME 4
Fun At Field Day!
ICOM

About the Story

In this fourth volume of the Adventures of Zack and Max comic book series, Icom America once again turned to the students from the Lake Washington Ham Club at Ben Franklin Elementary in Kirkland, Washington. The kids and their club leader, Dave Condon, KI7YP, conceptualized and wrote most of the story, which was loosely based on the club's own experiences during its 2005 Field Day exercise. Every year on the fourth full weekend of June, amateur radio operators throughout the Western Hemisphere (IARU Region 2) attempt to make as many radio contacts as possible using all forms of ham radio equipment.

We would like to thank once again our illustrator, Kayoko Nakajima, who brings our stories to life every year with her wonderful drawings! We hope you'll enjoy this book and that it inspires you to participate in your own annual Field Day exercise. To find an event near you, contact your local ham radio club. You'll find a list of clubs near you on the American Radio Relay League (ARRL) Website: www.arrl.org.

Written By
The students of the Lake Washington Ham Club

Special Writer Recognition
Kelsey Corley, KE7EBI
Rianne Peterson, KE7EBR
Diane Condon, KC7TQS

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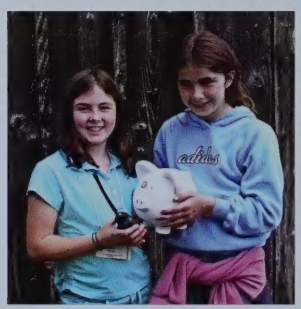
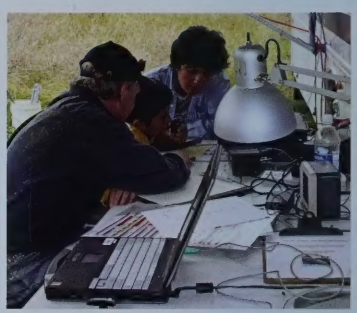
Photos of Field Day 2005–Lake Washington Ham Club

Pictured below are (from left to right): sign in; Max and friends; the GOTA Station; group photo; instructions; writing the story during time off; and the pot luck dinner.





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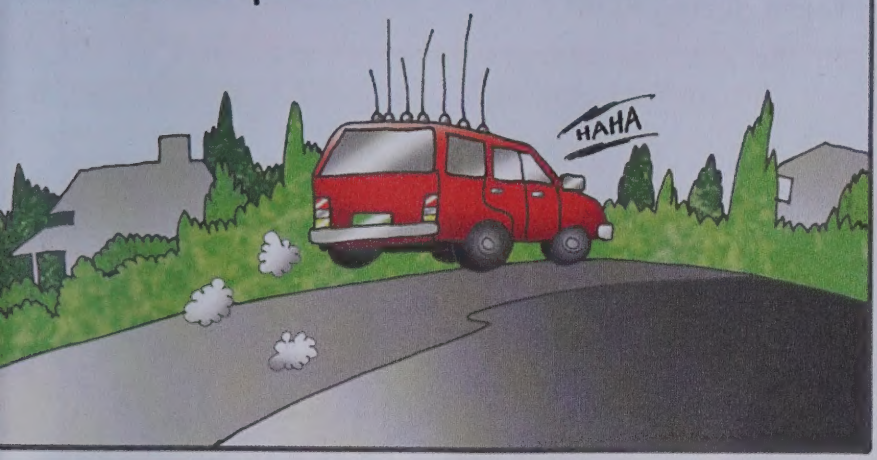
Early one Saturday morning, a week before Field Day, Mady and Zack are on their way to the Field Day Planning Meeting with Mady's dad...



Yup, but I was wrong.
Field Day is a practice emergency drill; our radio contacts might be only a town away, or be thousands of miles away.

That's right! Ham radio can help out not only if the power goes down, or if there's a tornado, but also with other disasters too, like tsunamis, earthquakes and with hurricanes, like Katrina.

Did you hear anything about how ham radio helped out with Katrina?
It's OK Max...
I sure did! I downloaded a whole bunch of articles that I packed along with my gear in my backpack! I was hoping I could share them at the meeting! Hey, and I was also hoping that we could be partners during Field Day...
Oh...yeah, about your backpack...
What?! You'll be my partner at Field Day, right?
Dorothy? Toto? Is that you?
You know that if it involves ham radio, I'm in! Although Max looks pretty tired out today.

Hey everyone, my name is Charlie Gorman, W7CEG. Thanks for coming to our annual Field Day meeting! Now as most of you know, the object of Field Day is to test our emergency preparedness and make as many contacts as possible during a 24-hour period.

Here's a list of things you'll need to bring next weekend.

List Of What To Bring:

1. Dress for the weather, bring extra sweatshirts, rain gear if needed, and extra dry clothes
2. A tent!
3. Sleeping bag, blankets and pillows
4. Food and snacks, also bring a dish to share for our evening pot luck
5. Something to cook with, and utensils
6. Water
7. Charged batteries for your radio
8. Your radio and a Repeater Directory
9. A compass
10. Paper and pen
11. Antenna, power supply, CW keyer, and a mic
12. A laptop, if you have one, and "logging" software
13. Games and sports equipment
14. Camera
15. Any gear you think we will need, check with Charlie

Any questions?... Okay, I'll continue. We are going to have 4 different types of stations; an HF, VHF, QRP, and Satellite. Kids! How about setting up a GOTA station?

Yeah! Our own GOTA station!

Oh, wait a minute; it looks like some of the kids are confused.

GOTA ... where?

It's all right, Max... Sorry, Mr. Gorman, can you help explain what's a GOTA station?

Oh! GOTA stands for **Get On The Air.** This is a special station for new hams to help them get started.

For the GOTA station we will use the call sign of KC7OIO, and for the other stations we will use the call sign KI7YP. *

It's really fun! LET'S DO IT!

Yeah!!

Excuse me again, but can we go over what all the different radios do?

Sure! At the HF station we'll use the Icom 718. This is a world-wide radio, from 160 meters up to 10 meters. HF means High Frequency, and we can talk all around the world.

IC-718

Yeah, but what about the '756PROIII? It's a HF radio too, isn't it?

*Rules for Field Day are found at: http://www.arrl.org/contests/announcements/fd/

Yes, and it will also be at the HF station. The '756PROIII has DIGITAL filters in it. The signal it sends to other radios is very clear, and it can receive radio stations that many other radios can't.

At the QRP station, we'll use the IC-703. QRP operation means transmitting at reduced power levels. A QRP radio puts out very little power. It usually runs on batteries, or even solar power! It is very portable, and is often taken on camping trips or hikes into the mountains by hams.

IC-703

I wonder what's next...

And this radio is both UHF, or Ultra High Frequency and VHF, Very High Frequency. We will use the IC-910H to make contacts with other radio stations through space satellites. In addition, we will try to talk with the astronauts on the International Space Station.*

IC-910H

WOW!

Well, now that we've got that settled, we should set up some committees. We'll need someone to head the antenna committee.

Me!

OK, Mady's dad...

We need someone in charge of a public information committee...

Me!

OK, Mary...

We need someone in charge of a committee for band control...

Me!

OK, Doug...

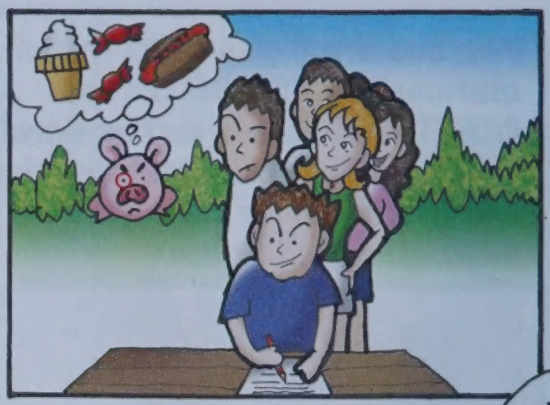
And lastly, we need someone in charge of another committee for food & games.

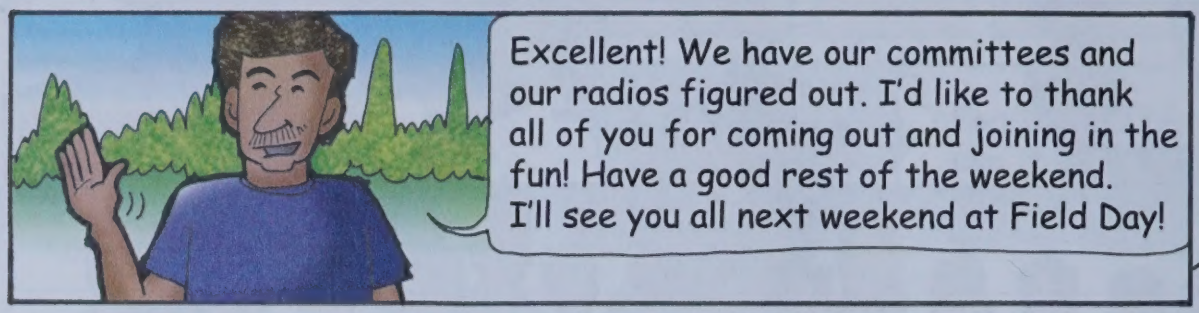
We'll do it!

Great! Lots of volunteers!

*For more information on ARISS (Amateur Radio on the International Space Station): http://spaceflight.nasa.gov/station/reference/radio/index.html

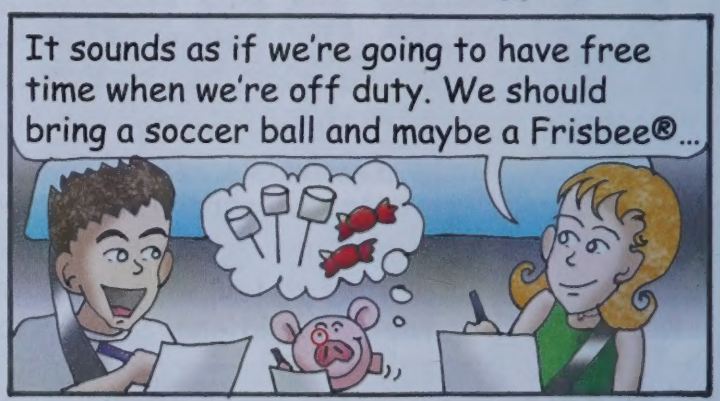
Oink!
Oink!
Oink!
You can't volunteer for the food committee, you're a little pig!




Excellent! We have our committees and our radios figured out. I'd like to thank all of you for coming out and joining in the fun! Have a good rest of the weekend. I'll see you all next weekend at Field Day!

Seeya!

This is going to be a lot of fun! It's like camping in your own backyard, but with radios.


It sounds as if we're going to have free time when we're off duty. We should bring a soccer ball and maybe a Frisbee®...

Yes, Max, I think we should bring hot chocolate mix, and marshmallows!

We could roast hot dogs, or even make those little pigs in a blanket!

Oink!? Pigs in a blanket?!!

...maybe not. How about hamburgers?

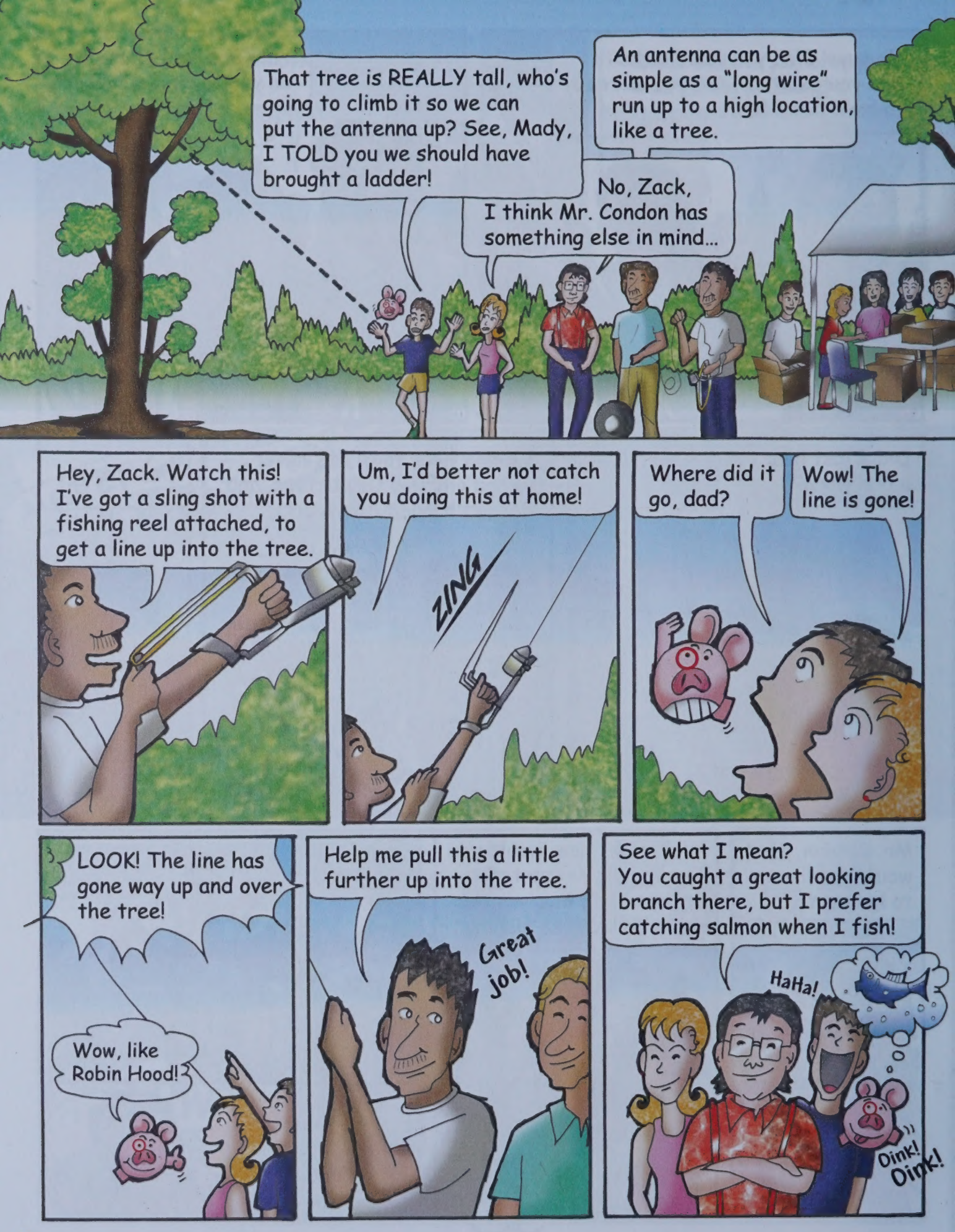
Yeah, that sounds much better!

When we get back to your house, let's make a list of everything we need!
I've already started making our list, let's go over it carefully. I wouldn't want to forget batteries, flashlights, and a tent!

Back at Mady's house
Let's see, we should bring radios, batteries, a Repeater Directory, maps, compass, watch...
...and also rope, duct tape, a ladder...
radios, batteries, repeater directory, maps, compass, watch
Really, Zack, a ladder?!
...sleeping bags, blankets, rain gear, flashlights, extra dry clothes, toothbrush & toothpaste, soap, towels, games, snacks, water...
Mady, a tooth-brush, really?!
FIELD DAY MORNING
Check! Check! Check!
Ready to GO!
Where is the list?
List Of What To Bring
Hi Dad!
Where are you?
YEP!!
Zack? Max?? Are you sure you need all this?
Oink! Oink!

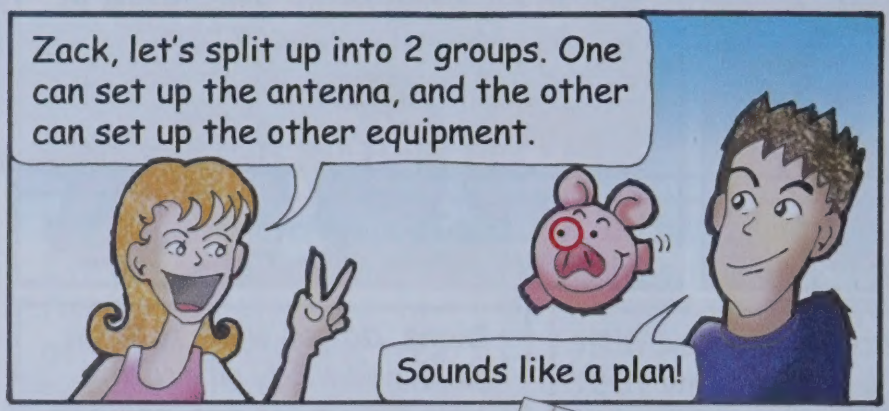
I'll follow you guys over there.
Alright, I'll see you there!
Zack! I think you brought everything possible!
Everything?
EVERGREEN PARK
Sign in
Oink!
Oink!
In
Tools
Cables
Cables
Cables
WOW!
Cables
IC-910H
IC-703
IC-756PROIII
IC-718
Power Supply
T-shirts
Kitchen/ pots/pans
Band Charts
Hi

Hi, guys! Glad you could make it. Are you excited? Are you all ready to have some fun?!
Yep! It's kind of cloudy, do you think it will rain?
Did I just hear a bad word?
?
?
A bad word!? You mean, rain?
I didn't hear that! It's never rained on Field Day before, and it won't happen this year!
Okay, Okay, we promise we won't say that again, but it IS cloudy.
Fair enough!
Mr. Condon, what would you like us to help with?
Well, right now, would you like to help set up the antennas? It involves the sport called tree fishing.
Fishing for trees?!
Ha-ha, I'll show you what I mean.


That tree is REALLY tall, who's going to climb it so we can put the antenna up? See, Mady, I TOLD you we should have brought a ladder!
An antenna can be as simple as a "long wire" run up to a high location, like a tree.
No, Zack, I think Mr. Condon has something else in mind...
Hey, Zack. Watch this! I've got a sling shot with a fishing reel attached, to get a line up into the tree.
Um, I'd better not catch you doing this at home!
ZING
Where did it go, dad?
Wow! The line is gone!
LOOK! The line has gone way up and over the tree!
Wow, like Robin Hood!
Help me pull this a little further up into the tree.
Great job!
See what I mean? You caught a great looking branch there, but I prefer catching salmon when I fish!
HaHa!
Oink! Oink!

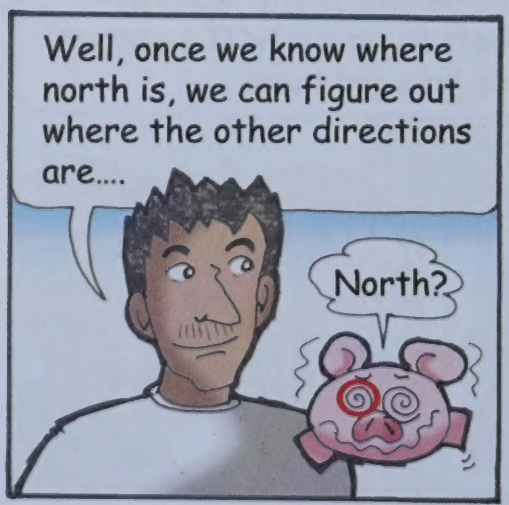
Now that you've seen how we set up some of the lines for the antennas, why don't you go over and help set up the GOTA station?
Hi!
Okay!
Dad, do you know where my chocolate is? I was going to make 'smores tonight.
Chocolate...
Hmmmm...
No, I don't. But I'd like to introduce you to Zack and Mady. This is one of my daughters, Diane, KC7TQS.
Hi! Is this your first Field Day?
No, I've been to a few with my dad, but this is my first one with Zack as a ham, and we are really excited!
Diane, do you want to show Zack and Mady where the time schedules are, and also where the GOTA station will be set up?
Sure, I know where that is! Just follow me.
Oh, look! We're scheduled for some of the same shifts!
We're also signed up together to be one of the leads in setting up our GOTA station, so let's get busy!

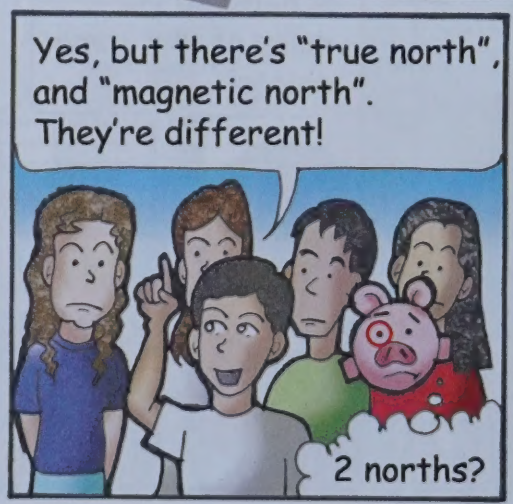
Looks like we've got lots of kids and moms and dads to help! This is great!
Hi Dad
Hi Zack

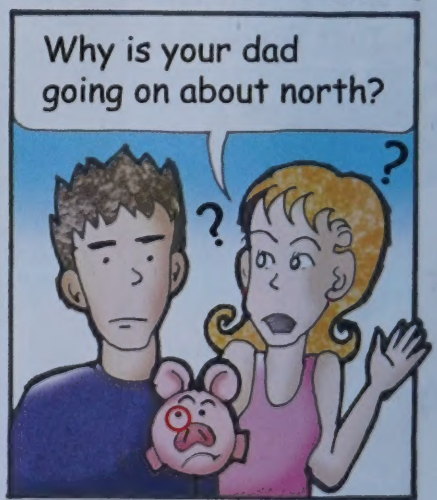

Zack, let's split up into 2 groups. One can set up the antenna, and the other can set up the other equipment.
Sounds like a plan!

BUT, first I want to point out a few things to everyone here.

How many of you know where north is? And why I have this mark on the map?
Test Map from Arctic Polar Services
That way!
That way!
That way!
North is that way!
North?
North!

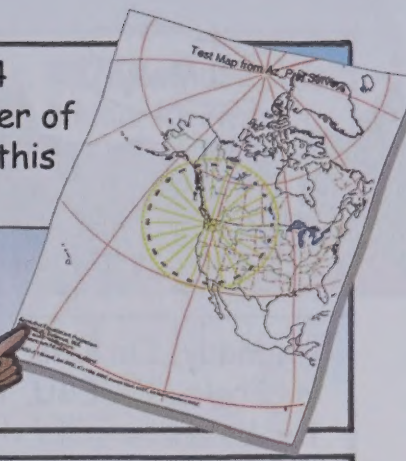

Well, once we know where north is, we can figure out where the other directions are....
North?


Yes, but there's "true north", and "magnetic north". They're different!
2 norths?


Why is your dad going on about north?
?
?

For this station, we will use magnetic north as our reference point to orient the antenna. That way, we know the meter on the rotor controller is accurately telling us where the antenna is pointed.

For the next 24 hours, the center of our universe is this GOTA station!



So what turns the antenna?

Oh, that motor thingy...

That antenna box thing...

It's not the radio is it?

The antenna rotor turns the antenna, and the antenna rotor is controlled by the rotor control box.

Control box

Once the antenna rotor and the rotor control box are set to "0", we install the antenna and aim it north! So, let's find north by using a compass.

Rotor

Here, use mine!

Uh, thanks Zack...

North!

OK, now we know where north is. We're ready to go!

Now we can set everything up."

Diane, please show everyone where the time schedules are, and let's unpack the band charts and grid square maps.

Let's start setting up the radios and get my laptop ready. Mady, please hand out log books...

Zack & Max, bring my toolbox. Make sure we've got the tape measure and the mallet!

Hi, Mady!
Hi
Hi!
Bye!
Seeya Mady!
Hi, Mady, I'm Kelsey, KE7EBI, and this is Nicole, KD7EBU. We'll help you unpack the boxes next to the table!
We're the twins, Clair, KE7AXJ, and Karen, KE7AXI. This is Anna, KE7EBS. We can help too!
I think I've spoken to some of you before on the radio! Let's all start unpacking the van. All the boxes are marked. Some of them have things we'll need at the table...
Hi! Olivia, KE7AXG here, and this is Dana, KE7AXW! We've got the power supply set up!
Hi
I'm Maggie, KE7EAV!
Hi, I'm Iman, KE7EBA. We've got some logbooks and t-shirts for everyone!
Icom kid
I wonder which one is which...
Then, when you're ready, just come with me. We'll see that you know what time you're all signed up for.

Hi, I'm Patrick, KE7EBX, and this is my friend, Zach, KE7EBK. We're with my Dad and Grandpa; we're all hams, ready to help!
Another Zach! Great! And who else have we here?
I'm Zach, with an "h".
I'm Kuroshe, KE7EAX, and this is my friend, Nema, KE7EBC.
Hi
Hi, Zack, I'm Matin, KE7EFO, and this is my friend, Bobby, KE7EBB. We want to help!
Hi
No Problem! This is great, the more the better! We'll need everyone to follow along, and to help hold the guy lines steady as the antenna goes up!
What kind of antenna is this?
It's a Yagi portable system. It's not like the large one that the grown ups are setting up over there.
First, we'll measure the antenna elements for the 20 meter band. Then we'll attach them to the boom, which attaches to the mast. Finally, we'll push the whole thing up from the center by loosening the clamps on the mast. It just keeps telescoping up!
Boom
Mast
Clamp
COOL!
OK, buddy up. I'm going to start by assembling the boom... the center piece of the antenna.

Zack, you help every group measure out for the correct bands.
I want each group to hold on to one of these guy lines. Patrick, you and your grandpa go along and hammer the lines into the ground with the mallet. Keep the antenna steady as we telescope it up and square it off!
Wow, Looks like we're set up first!
Oh, No!
Hold On!
Mr. Condon, please take the cable, and let's get her set up into the rigs.
Got it!
We're all set here, how are you doing?
Never better, this looks great!
I've got the computer up and running and the rigs look great!
Everyone has checked the time schedule, and it looks like we're ready! I'll let you guys get settled in with your tents and gear. I'll see you later!
Bye!
See you later!

Zack, lets get our tents set up before we start talking on the radio.

Mady, we'll all help you set up your tent. It's the least we can do for all the work you did at the GOTA station! We are so glad you are here this year!

Is that a pig?

Yeah, that's Zack's pig, Max. He is very friendly.

That makes sense, a ham at a ham radio event!

Hey, Mady, we'll help out too!

Thanks! I can use the help.

Hi, Mady!

...Is it Karen and Clair, or Clair and Karen?

Hey, Olivia, guys, we're over here!

We brought badminton too!

Zack, we'll help you set up your tent.

Bobby and I will help too, and here comes Patrick and Zack. Look, the girls are already done! We better hurry up.

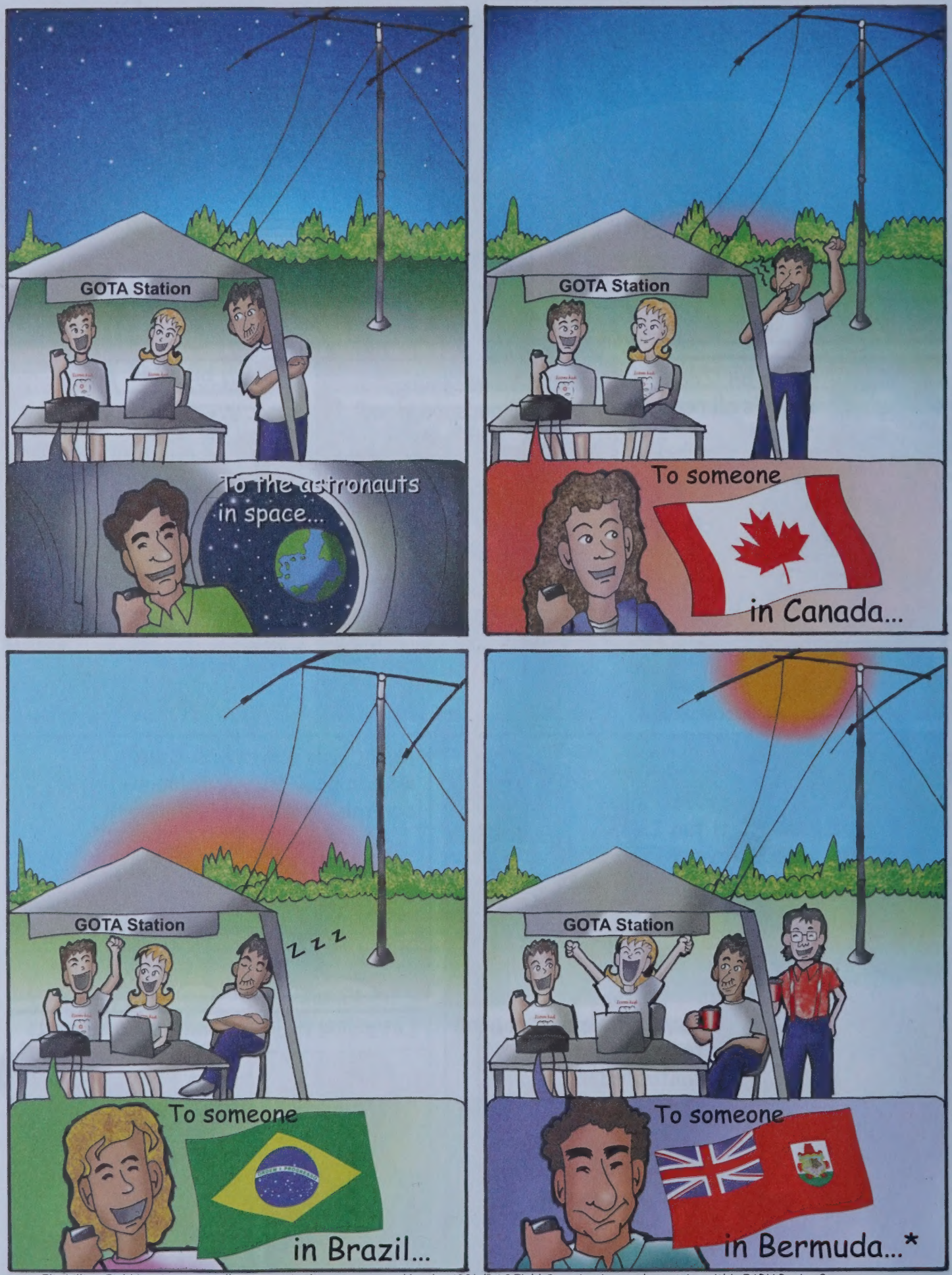
Thanks!

CQ, CQ, CQ... contest, this is KI7YP....
HEY! The contest is starting!
Come on, Mady, the contest has started!
Do you remember what CQ means?
I know this one... calling... calling... calling quickly!
CQ means calling any station. When one of the radio operators makes a contact with another radio station they both exchange information like the contest call sign, their location, and the classification of the radio stations.
OK, Zack, let's start you on the GOTA station. Mady, you sit down at the computer and type in the call sign of the contact.
Field Day can be a little nerve wracking at first, so I've prepared a script. I want everyone to read it over first, and then let's start.
GOTA SCRIPT:
1. "CQ Field Day, CQ Field Day, this is KC7OIO, Kilo Charlie 7 Oscar India Oscar calling CQ Field Day and listening."
2. Then someone calling in will use your station's call sign followed by THEIR CALL SIGN.
3. Record this as a contact.
4. Don't forget that people will use words and numbers together to help make their call sign easy to understand.
5. To make a contact, listen for the Radio Station's call, and then as they finish, answer back with THEIR call sign and then YOURS and "how do you copy?"
6. Don't forget to be polite and say: "Thank you" or give a big "73", which is a ham's way of saying the same thing.

OK, here goes: CQ Field Day, CQ Field Day, this is KC7OIO, Kilo Charlie 7 Oscar India Oscar calling CQ Field Day and listening.
What did he say!?
KC7OIO, this is N7DUO, how do you copy?
He said his call sign was N7DUO.
Why does he sound so funny?
What's going on?!
Well, Zack, with your handheld radio you talk on VHF, which gives a very clear voice pattern. Here, you are talking on HF where the radio waves are much longer, and can make voices sound funny. As you listen to people talk on HF, you will soon be able to understand what they say. Speak very clearly and try again!
VHF
HF
CQ Field Day CQ Field Day this is KC7OIO, Kilo Charlie 7 Oscar India Oscar calling CQ Field Day and listening.
KC7OIO, thank you, this is N7DUO, November 7 Delta Uniform Oscar! How do you copy?
November 7 Delta Uniform Oscar, thank you, you're coming in clear! 73 from Kilo Charlie 7 Oscar India Oscar!
I got it all recorded, let's keep going!
Go GOTA Station! Go Field Day!
Thank you, KC7OIO and a big 73 to all of you! QRZed.

HOURS LATER
Zack and Mady, we will take over now to give you a rest.
How did it go?!
Great! Our furthest contact was New Hampshire!
Washington
New Hampshire
It's hard work, but really amazing to be able to talk so far without wires or cables.
Wow! That's over 3,000 miles!
I wonder how far they'll talk?
How many marshmallows do you want?
As many as you can fit on that stick!!
Mmmm!
Do you want a marshmallow?
No, thanks. I'm still trying to find my chocolate! I can't seem to remember where I put it. I guess I will have to do without 'smores tonight. Sorry guys. Anyway, I think I'm going to go to bed. Our shift is early in the morning. Good night!
Good night, Diane. I haven't seen that chocolate anywhere! It's really strange!
And where's Max?!
Well, we all better turn in soon. We want to make sure we're in good shape for our shifts.
I think we need to get back to our tents. We have to be on the air at 2:00 AM. And we want to talk even farther then our first shift!

Good night!
Good night!
ZZZ
ZZZ
ZZZ
LQLQ
HOURS LATER
Come on, Zack, Mady's all ready there!
mmm
OK! I am coming, but I am sooo tired!
Max? Where is that pig?!
GOTA Statio
Mady, how far do you think we can get? Do you think we can talk to the space station?
Come on, Zack, someone from Argentina just contacted my dad!
COOL!
Let's give it a try!
Icom kid
Icom kid



•Eligibillity: Field Day is open to all amateurs in the areas covered by the ARRL/RAC Field Organizations and countries within IARU Region 2. See: http://www.iaru-region2.org/.

Congratulations! We've made a couple of hundred contacts on our GOTA station during the last 24 hours, including a contact with astronauts! If this would have been an actual emergency, instead of a Field Day, we would have been able to request and get all sorts of emergency help from outside the local area.
Thank you, and well done, radio operators! Now, let's take everything down and head on home!
Mady, do you know where Max is? I couldn't find him last night.
No. Last time I saw him was before marshmallows. What are all these wrappers from?

So, how did you like Field Day? Did you have fun?
Yeah! I really liked talking to the astronauts, and people from all over the United States and contacting the whole world!
Me, too! By the way, Diane, did you ever find your chocolate?
NO, but that's okay. I'm glad you guys had a fun time! Where is Max?!
We're not sure, but, if we follow all of these wrappers, something tells me we'll find him!
BURRRP!
Looks like Max made "contact" with the chocolate!
Oink!

Well, your rides are waiting, so you better get going with Max. Take care! It was nice to meet you both. I hope to hear you on the radios, and I'll see you next year!

Bye, Diane!

Bye, Diane, see you next year!

I think after I get rested up, I'm going to study for my general class radio license.

Zzz

Great! Then we BOTH can talk on HF! I'll help you with the test.

Bye!

Bye!

Bye!

73!

See YOU next Field Day!

The ADVENTURES OF ZACK & MAX

Icom America Inc.
2380 116th Ave NE
Bellevue, WA 98004
Ph: 425-454-8155
www.icomamerica.com

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